



# Maker pioneers from Iraq visit MIT campus

## Makerspace acted to avoid looking like terrorist outfit

By Drew Bent and Sanjana Srivastava

ASSOCIATE NEWS EDITORS

Three Iraqi technologists who founded the first makerspace in Basra, Iraq visited MIT on Monday and Tuesday to meet with various labs and student groups as part of a tour hosted by the Media Lab and the Undergraduate Association Innovation Committee.

The technologists had wanted to experience MIT's maker culture and technologies firsthand, as well as share the challenges they faced establishing a makerspace in Iraq. In classic MIT style, they also had the opportunity to sail on the Charles River late Monday afternoon with UA President Matthew J. Davis '16.

Nawres Arif started his career in pharmacology, but says he's been a maker his entire life. In March 2014, he started the makerspace Science Camp on the side and made it the second established makerspace in all of Iraq. He and his co-founders, however, have faced numerous challenges, especially when it comes to Iraqi law.

Due to the machines and chemicals they use in Science Camp, Arif told *The Tech* that their makerspace could easily resemble a terrorist organization's operations. As a result, Arif looked for a way to get the makerspace sanctioned. He met with the Minister of Science and Technology to share the idea for Science Camp, and together they rewrote a law about technological incubation in Iraq and introduced makerspaces into the law.

Then, just a few weeks ago, the Iraqi Prime Minister Haider al-Abadi consolidated parts of the government amidst protests and merged the Ministry of Science and Technology with the Ministry of Higher Education and Scientific Research, bringing uncertainty to the future of Science Camp and forcing Arif and his co-founders to consider alternative ways to legally structure it.

While Arif and his colleagues face challenges like these all the time, their efforts finally met with success this past April when Arif entered a startup competition hosted by the MIT Enterprise Forum Pan Arab Region. He made it through the first round, and even though he was denied a visa to compete at the finals in Kuwait, he participated online over Skype. Arif finished in

Makers, Page 14



NICHOLAS D. CURTIS

A "blood moon" lit the night sky on Sunday. A lunar tetrad, or a fourth consecutive total lunar eclipse with no partial eclipses in between, coincided with a supermoon, or a full moon that is also at its closest approach to Earth in its orbit.

# Random will seek new housemaster

## Well-liked Davis-Millis announces she will leave, reflecting on tenure

By Emma Bingham

Nina Davis-Millis, Random Hall's housemaster, announced Monday that she and her husband, Chris Millis, will be leaving the dorm at the end of this academic year. Davis-Millis, who has been housemaster at Random for more than two decades, is also Director of Community Support and Staff Development at MIT Libraries. In an email to the dorm, she called her experience at Random "amazing" and "transformative."

She said that she and her hus-

band were leaving because they're "just ready." She said that she still loves Random, and called this a "bittersweet moment."

The couple has bought a house in Weymouth, about a half-hour's drive south of MIT, and will be moving there next summer. When asked if the move was because she wanted a "change of pace," Davis-Millis mentioned that, at 61, she would like "more leisure" and to "cut back to just one job."

Davis-Millis, Page 14

## Random Hall eschews Family Weekend security policies

Random Hall will not be compelled to comply with the DSL's dorm security policy for Family Weekend — parents will not be granted automatic access to the building.

DSL's policy, which will still be in place elsewhere, allows any registered family member to access any undergraduate dorm at any time throughout the weekend.

"All families who have Family Weekend name badges only need to present their name badge and government-issued ID to the desk

attendant for verification when entering any undergraduate residence hall," according to an email from the department of Residential Life and Dining.

The DSL sought dorm feedback on that policy, which allowed family members to enter dorms without being signed in from 8 a.m. on Oct. 23 to 11 p.m. Oct. 25 but required students to follow the normal procedure.

Last year's Family Weekend security policies frustrated students across several MIT dorms, includ-

ing Random Hall and East Campus. Despite the concerns raised last year, this year's proposed policy was identical.

Students from Random took issue with the policy, particularly because it allowed parents of non-residents to enter the building. "This is a private residence, not a tourist attraction," one student wrote in an email thread.

As a result of these complaints, RLAD Michael Barcelo convinced DSL to change the policy.

"Random's security policy/guest

list policy will not change for Parents Weekend," Barcelo said in an email to the dorm. "If students want to allow their parents to access the building, they can either put them on their respective guest list or directly escort and sign them in to the building."

"I brought the voiced concerns of Random regarding parents weekend to Dean Humphreys yesterday and let him know that what was proposed would not work for community," Barcelo said.

—Katherine Nazemi

# More students pass bio & chem ASEs this year

## Overall ASE pass rate increases slightly

By Christopher Wang

During freshman orientation this year, over 39 percent of the incoming freshman class sat for Advanced Standing Exams to receive credit for a variety of classes. The overall passing rate for ASEs was 59 percent, which is slightly higher than the past two years' average of 55 percent.

Freshmen performed unusually well on the 5.111 (Principles of Chemical Science) ASE this year, Julie Norman, Senior Associate Dean for Undergraduate Education told *The Tech*.

"This year's pass rate was 32.3

percent; in the past 12–18 percent has been the traditional pass rate," she said.

The number of students taking the exam, 443, was also up from last year's 398, Norman said. The pass rate on this year's 7.01x (Introductory Biology) ASE was also significantly higher than in previous years: 55 percent of students who took the exam this year passed, up from the 38 percent averaged over the last four years.

For the math and physics General Institute Requirements (GIRs),

ASE, Page 3

### IN SHORT

**Get your flu shot today!** MIT Medical is holding a walk-in flu-shot clinic today, Oct. 1, from 10 a.m. to 4 p.m. in Walker Memorial. Bring an MIT ID with you.

**The Cambridge voter registration deadline is Oct. 14.** If you meet the requirements, you can register online, by mail,

or in person before this year's elections.

**Add date is Friday, Oct. 9.** This is the last day to add subjects to your registration. A \$100 late fee and petition will be required of students completing registration after this date.

**Send news and tips to** [news@tech.mit.edu](mailto:news@tech.mit.edu).

## Two MIT affiliates named MacArthur fellows

An MIT alumnus and an MIT economics professor have been selected as 2015 MacArthur Fellows, and both will receive a no-strings-attached reward of \$625,000.

The fellowship, also known as the "genius grant," is given to 20 to 40 individuals each year, selected by an anonymous

MacArthur, Page 2



TRISTAN HONSCHEID—THE TECH

Facilities workers clean a flood in Building 16 after heavy rains Thursday caused flooding in several campus basements.

### DO YOU EVEN LIFT?

When I learned I got into MIT, I worried more about the swim test than about the academics. **CAMPUS LIFE, p. 12**

### WHAT IS CODE?

A CS-illiterate attends HackMIT. **CAMPUS LIFE, p. 12**

### WHY IS TRUMP RUNNING?

And how long will this go on? **OPINION, p. 4**



### 23 ARTISTS IN 3 DAYS

Flower crowns, beach balls, and light sticks at Boston Calling.

**ARTS, p. 11**

### ROCKING OUT ON THE CELLO

Beiser "uncovers" the greats. **ARTS, p. 11**

### SECTIONS

Weather . . . . .2  
Opinion . . . . .4  
Fun Pages . . . . .5  
Arts . . . . .11  
Campus Life . . . .12  
Sports . . . . .16



MacArthur, from Page 1

committee from a pool of nominees.

Assistant Professor Heidi Williams, who has been in MIT's economics department since 2011, received the fellowship for her research on the economics of innovation in the healthcare market. She has studied the implications of market behavior and public policy, such as intellectual property restrictions, on drug development and health care research.

Cornell Professor William Dichtel '00, who graduated from MIT with a degree in chemistry, has broken ground on the study of covalent organic frameworks, which have practical applications in storing chemical fuels or electrical charge and purifying water. Covalent organic frameworks are ordered molecular grids or scaffolds with immense surface areas given their mass, and they were very difficult to work with until Dichtel's team demonstrated new techniques to incorporate them into devices.

Journalist Ta-Nehisi Coates, who was a visiting writing professor at MIT from 2012-2014, was recognized for his work addressing "complex and challenging issues such as racial identity, systemic racial bias, and urban policing."

Three MacArthur Fellows last year had MIT connections: Jacob Lurie was an MIT associate math professor, and Ai-jen Poo and Rick Lowe were Community Innovators Lab fellows.

The \$625,000 award will be paid out to each fellow in five annual installments.

—Ray Wang

Institute Double Take

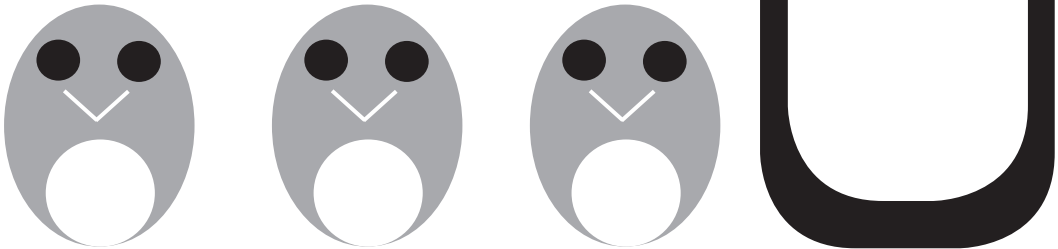


By Dheera Venkatraman

A long exposure image of the first half of the Sept. 27 lunar eclipse, taken from near Boston's Zakim Bridge, showing the moon's decreasing luminosity and characteristic red hue at totality resulting from the wavelength-dependent Rayleigh scattering of the earth's atmosphere. The image was taken by stacking 320 images taken at 30-second intervals.

Exposure Time:  
2 sec. x 320

Be a PENguin  
write for us  
e-mail [join@tech.mit.edu](mailto:join@tech.mit.edu)



WEATHER

Developing Hurricane Joaquin is unlikely to affect Massachusetts

By Colin Thackray  
STAFF METEOROLOGIST

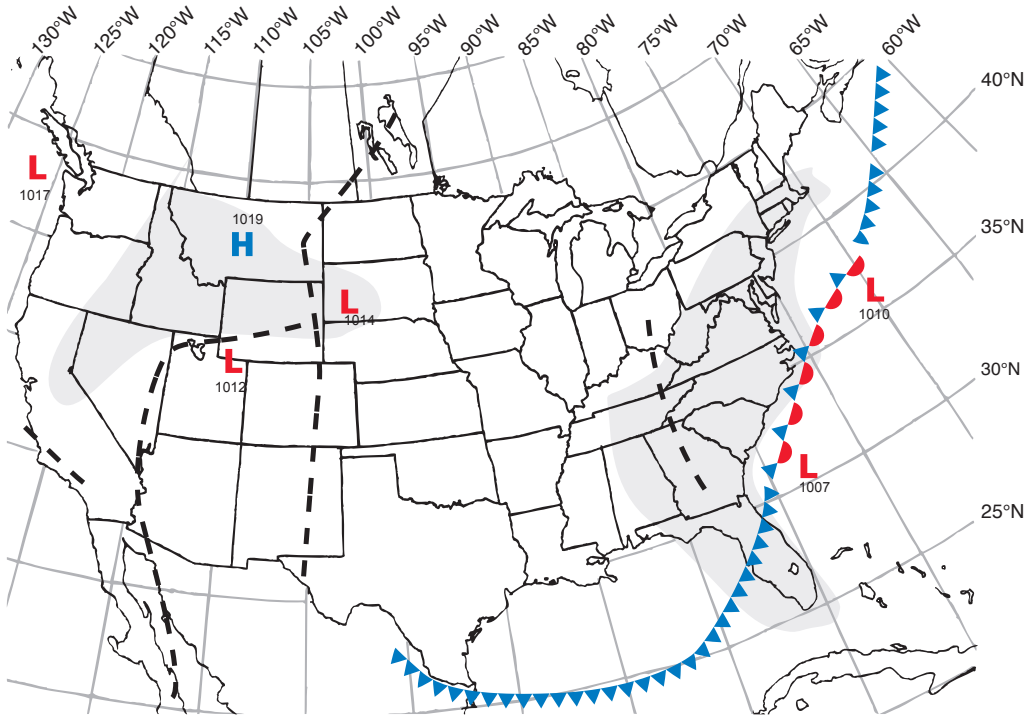
Mild temperatures and a chance of rain will be the norm through the end of the weekend. It will be noticeably cooler than the beginning of the week was, with rain likely at some point over the weekend.

In the Caribbean, there is a storm (Joaquin) currently strengthening to a category 2 hurricane, threatening the Bahamas over the next day or so. Current forecasts have the storm

hitting the Eastern U.S. late this weekend or early next week, most likely in North Carolina or Virginia. At the same time, forecast models show the possibility of Joaquin hitting as far south as South Carolina and as far north as Massachusetts, or even staying off the east coast entirely. A handful of days in advance there is still much uncertainty in the forecast and readers are advised to check resources such as the National Hurricane Center as the storm develop to plan their weekends wisely.

Extended Forecast

**Today:** High of 60°F. Winds N 15-20 mph. Chance of showers.  
**Tonight:** Low of 50°F. Winds NE 15-20 mph. Chance of showers.  
**Tomorrow:** High of 55°F. Winds NE 20-25 mph. Chance of rain.  
**Saturday:** High of 55°F. Winds NE 20-25 mph. Chance of rain.  
**Sunday:** High of 60°F. Winds NE 15-20 mph. Chance of rain.



Situation for Noon Eastern Time, Thursday, October 1, 2015

Weather Systems		Weather Fronts		Precipitation Symbols		Other Symbols	
H	High Pressure	- - -	Trough	Snow	*	Fog	☁
L	Low Pressure	—•••••	Warm Front	Light	*•	Thunderstorm	⚡
§	Hurricane	▲▲▲▲▲	Cold Front	Moderate	**	Haze	∞
		▲•••••	Stationary Front	Heavy	**•		

Compiled by MIT Meteorology Staff and The Tech

File Edit Options Buffers Tools Im-Python Python Help

```
from new_skills import *  
  
def learnMarketableJobSkills():  
    return linux, OSX, javascript, applescript, perl, python, PHP  
  
if self.interest == True:  
    print "E-mail join@tech.mit.edu"
```



# Pass rate for chem ASE up from 2014

*As in years past, slightly more than half of those taking 18.01 ASE pass*

ASE, from Page 1

ASE pass rates deviated little from their past values. This year, 36 percent of students passed the 8.01 (Physics I) ASE, while 56 percent of students passed the 18.01 (Single Variable Calculus) ASE. The average rate over the last four years has been 37 percent for 8.01 and 52 percent for 18.01.

ASEs offer students an opportunity to receive credit for prerequisite classes, allowing them to move on to higher-level courses. With a few exceptions, MIT does not award credit for AP or IB classes, which often do not cover all the material in an MIT GIR.

Although most ASEs resemble the course’s final exam, Sooraj Boominathan ’19 found that “the

5.112 OCW materials definitely helped more than the 5.111 materials in preparation for the chemistry exam. The ASE was definitely harder than the 5.111 final posted on the OCW page.”

Some students chose not to take ASEs, even though they had the necessary high school experience.

Cannon Vogel ’19, decided not to take the 8.01, 18.02 and 18.03 exams, choosing instead to re-learn some material in order to “build firm backgrounds in the subjects.” Vogel does not regret his decision: “The professors are really good at taking things I thought I knew and twisting them into problems that are actually difficult.” Vogel also said that not jumping into new material right away has given him “more time for friends and activities.”

### Solution to Pumpkin

from page 6

4	3	1	2
2	1	3	4
3	2	4	1
1	4	2	3

### Solution to Spice

from page 6

3	4	1	2
2	3	4	1
1	2	3	4
4	1	2	3

### Solution to Latte

from page 6

2	4	3	1
1	3	2	4
3	1	4	2
4	2	1	3

### Solution to Crossword

from page 5

A	C	R	E		C	R	O	W	S		A	C	H	E	
N	O	E	L		R	O	D	E	O		S	H	O	W	
E	L	S	E		O	B	O	E	S		H	A	R	E	
W	A	T	C	H		W	O	R	D		C	O	I	N	S
		T	E	N	T	S		B	A	R	N				
S	P	R	E	E	S		F	O	R	E	S	T	S		
T	R	I	E	D		D	R	O	N	E		T	I	L	
Y	E	N	S		B	A	A	E	D		S	O	L	O	
L	E	G		B	U	R	N	S		S	T	R	E	P	
E	N	L	A	R	G	E		C	H	E	E	S	E		
		E	R	A	S		T	A	H	O	E				
A	P	A	R	T		C	A	M	E	O	R	O	L	E	
L	O	D	E		V	A	S	E	S		S	W	A	N	
A	L	E	S		A	G	E	N	T		T	E	N	D	
S	O	R	T		N	E	R	D	S		O	D	E	S	

### Solution to The Great Pumpkin

rom page 6

2	3	7	5	6	1	8	9	4
1	2	6	4	5	9	7	8	3
8	9	4	2	3	7	5	6	1
9	1	5	3	4	8	6	7	2
5	6	1	8	9	4	2	3	7
6	7	2	9	1	5	3	4	8
4	5	9	7	8	3	1	2	6
7	8	3	1	2	6	4	5	9
3	4	8	6	7	2	9	1	5

Is there anyone you want to shadow for **24 hours**?

We’re looking for writers to follow someone around for one day and write about it!

It’s a great way to **make connections** on campus!

Join **Campus Life @ The Tech!**

E-mail [join@tech.mit.edu](mailto:join@tech.mit.edu)

# Teach for Splash

Join hundreds of MIT students  
Nov. 21-22 in teaching 2700+ high school students all that you know.

## Final Deadline: Oct. 6

[esp.mit.edu/signup](http://esp.mit.edu/signup)

Past classes include:

- Arabic 101
- Death by Chemistry
- My Very First Website
- Cake Decorating

This space donated by *The Tech*

## The MIT Press Bookstore’s

# FALL 2015

# LOADING DOCK SALE

“No Book Dealers” Day\*

**Saturday, October 3rd, 10am-6pm**

“Open to All” Day\*

**Sunday, October 4th, 10am-6pm**

TONS and TONS of MIT Press books and journals **UP TO 95% OFF!**

Sale books from other publishers too!

\*some special admission rules apply, check the website for details:  
<http://web.mit.edu/bookstore/www/events/>

### The MIT Press Bookstore

292 Main Street, Cambridge  
(617) 253-5249, [books@mit.edu](mailto:books@mit.edu)

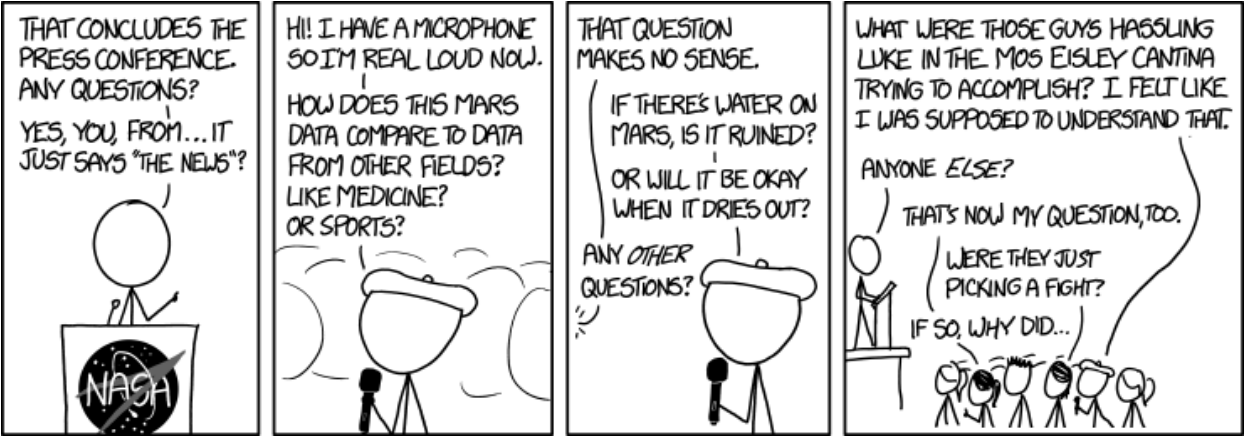
**“a feeding frenzy for the brain!”**





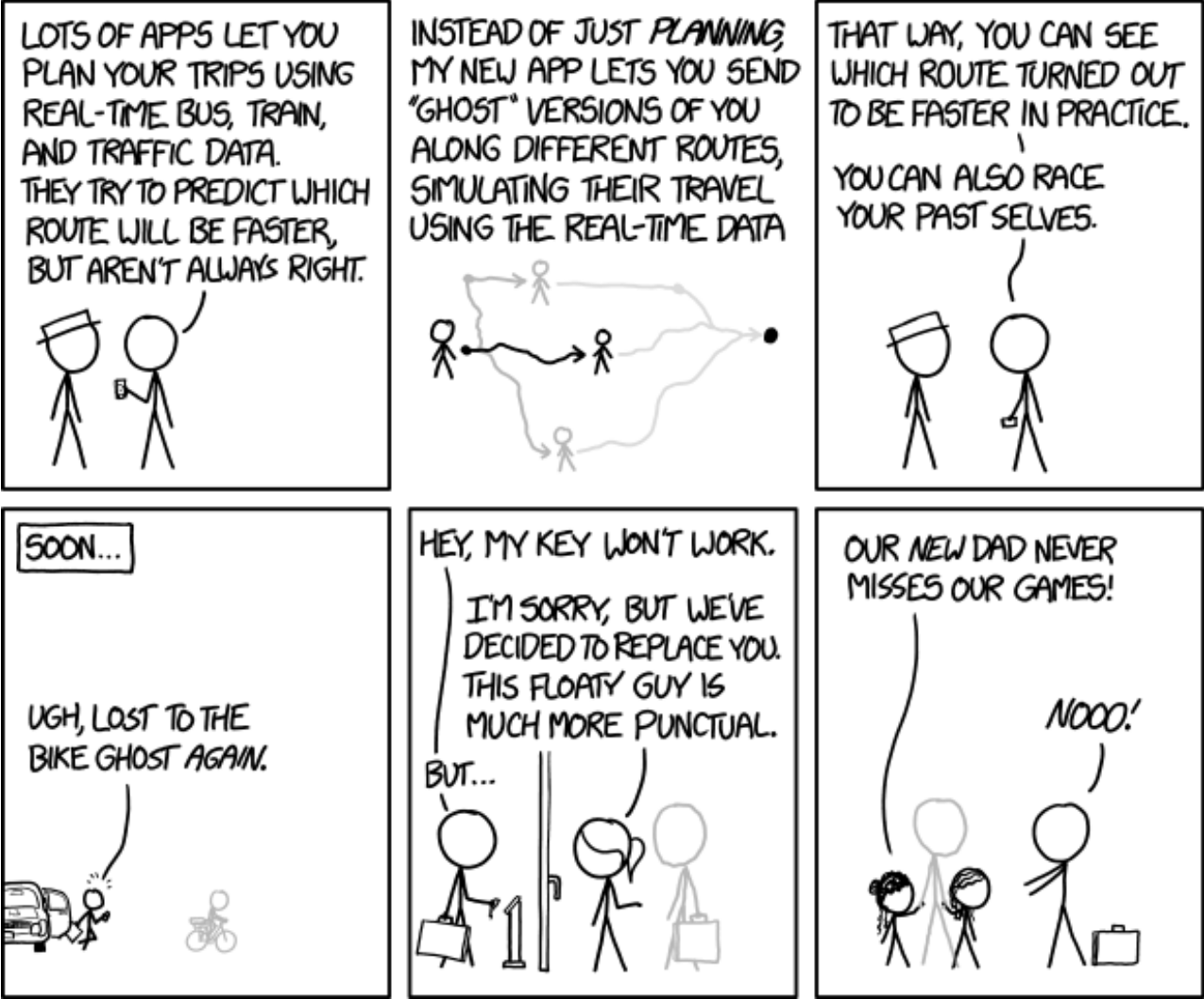


[1583] NASA Press Conference



Why are we spending billions to ruin Mars with swarms of robots when Elon Musk has promised to ruin Mars for a fraction of the cost?

[1580] Travel Ghost



And a different ghost has replaced me in the bedroom.

Jewelry Box by Gail Grabowsky

Solution, page 3

ACROSS

- 1 Cornfield measure
- 5 Cornfield birds
- 10 Have sore muscles
- 14 Christmas carol
- 15 Bronco-riding event
- 16 Performance
- 17 "So what \_\_\_ is new?"
- 18 Woodwind instruments
- 19 Rabbit relative
- 20 Slogan
- 22 Nickels and quarters
- 23 Camping shelters
- 24 Hayloft locale
- 25 Shopping binges
- 28 Thickly wooded areas
- 31 Made an attempt
- 32 Plane without a pilot
- 34 Up to, for short
- 35 Cravings
- 36 Sounded like a sheep
- 37 Fly by oneself
- 38 Turkey drumstick
- 39 Overcooks on the barbecue
- 40 Throat ailment

- 41 Make bigger
- 43 Cheddar or Swiss
- 44 Historical time periods
- 45 Western resort lake
- 47 Take \_\_\_ (disassemble)
- 49 Small part for a film star
- 53 Vein of ore in a mine
- 54 Bouquet holders
- 55 Graceful bird
- 56 Pub beverages
- 57 Insurance broker
- 58 Take care of
- 59 Separate into stacks
- 60 Geeks
- 61 Verses of praise

DOWN

- 1 All over again
- 2 Fast-food beverage
- 3 Take a breather
- 4 Those voted into office
- 5 Kings' headgear
- 6 Worker made out of metal
- 7 Aromas
- 8 Unwanted garden plant
- 9 Sailor's "Help!"

- 10 On dry land
- 11 National retail outlet
- 12 Trumpet or bugle
- 13 Lambs' moms
- 21 Follow the advice of
- 22 Show concern
- 24 Fictional spy James
- 25 In \_\_\_ (fashionable)
- 26 Fuss in front of a mirror
- 27 Crime boss
- 28 Opponents
- 29 Kitchen flooring pieces
- 30 Inclined surface
- 32 Take a chance
- 33 Competed in a marathon
- 36 Insects, informally
- 37 Points in the direction of
- 39 "Spoiled" kid
- 40 "Scat!"
- 42 Take into custody
- 43 Pirates' treasure holders
- 45 Stun gun
- 46 Modify, as a law
- 47 "Dear me"
- 48 Sport on horseback
- 49 Hamster's home

1	2	3	4		5	6	7	8	9		10	11	12	13
14					15						16			
17					18						19			
20				21					22					
			23					24						
25	26	27						28				29	30	
31					32	33					34			
35				36						37				
38			39						40					
41			42					43						
		44				45	46							
47	48				49						50	51	52	
53					54					55				
56					57					58				
59					60					61				

- 50 Was in debt
- 51 Narrow road

- 52 Brings to a halt
- 54 Mover's vehicle



Solution, page 3

$72x$		$3+$	
	$24x$		
		$4$	
$8x$			$3$

Instructions: Fill in the grid so that each column and row contains exactly one of each of the numbers 1–4. Follow the mathematical operations for each box.

Solution, page 3

11+			2
2		16x	
8x		3	
		6x	

Instructions: Fill in the grid so that each column and row contains exactly one of each of the numbers 1–4. Follow the mathematical operations for each box.

## Solution, page 3

48x			5+
9x			
	8x		6x
4		1	

Instructions: Fill in the grid so that each column and row contains exactly one of each of the numbers 1–4. Follow the mathematical operations for each box.

## Solution, page 3

12×		23+			26+			4
1		10+			63×	12+		3
31+			18×				6÷	
		4−		32×		12×	14×	
180×			288×				14+	
	5−		10+		15×			2−
26+				24×		8×		
56×		3		168×			45×	
96×			6			8−		5

Instructions: Fill in the grid so that each column, row, and 3 by 3 grid contains exactly one of each of the digits 1 through 9.





תגלית • TAGLIT  
BIRTHRIGHT ISRAEL

DISCOVER

A NEW WAY

TO COMMUTE



EXPERIENCE THE **ULTIMATE ADVENTURE WITH ISRAEL**  
**WITH ISRAELIS ON BIRTHRIGHT ISRAEL: SHORASHIM MIT HILLEL!**

*FREE TRIP TO ISRAEL FOR JEWISH 18-26 YEAR OLDS!*

**REGISTER NOW AT [BIT.LY/FREETRIPTOISRAELMIT](http://bit.ly/freetriptoisraelmit)**

QUESTIONS? EMAIL SHOSHANA AT [BIRTHRIGHT@MIT.EDU](mailto:BIRTHRIGHT@MIT.EDU)

**LAST CHANCE - REGISTER BY OCTOBER 9TH!**



THIS TRIP IS A GIFT FROM BIRTHRIGHT ISRAEL

CONTACT US: (312) 267-0677 • [INFO@SHORASHIM.ORG](mailto:INFO@SHORASHIM.ORG)





Daughter



Hozier



Chvrches



MisterWives



Ben Howard

# Boston Calling

Photography by  
Jessica L. Wass



Chromeo



Alabama Shakes



Of Monsters and Men



Nate Ruess



Walk the Moon





# HACKING ARTS 2015

Hacking Arts is an annual conference, hackathon, and tech expo centered on the intersection of technology and the arts. The conference on Saturday included panels on topics like desirable design, entrepreneurship in gaming, and interactive cinema as well as a keynote speech by Young Guru on the “Era of the Engineer.”

Photography by Lenny Martinez





## CONCERT REVIEW

# Boston Calling

Fall music festival was a great way to spend the weekend

**By Ka-Yen Yau**  
*STAFF WRITER*

Boston Calling took place in City Hall Plaza this past weekend, and the entire area buzzed with energy and excitement the whole time. Surrounding the two stages were dozens of tents where local companies and vendors sold food, flower crowns, and handed out samples. People flowed in and out between performances, but there was also a constant, huge mass of people right in front of the stages, waiting for the next performer to come out. The energy increased greatly during performances, fed by both the performers' and the crowd's excitement to be there. The crowd danced and sang along with the performers, all whilst cheering, tossing around beach balls, and waving their arms and blue light sticks along to the music (in the attempt to join the camaraderie, someone even waved his crutch instead). Boston Calling is truly an event that captures the youthful and fun personality of Boston.

Boston Calling had 23 different artists over the three days, allowing you to pick and choose which concerts you wanted to attend, which works great for college

students. With pssets, applications, and papers that demanded attention this weekend, I incentivized my work schedule around the performances I really wanted to see. Of Monsters and Men got me to finish my 6.0001 pset, Alt-J helped me get through 22.01, and the prospect of watching Nate Ruess got me through 8.03.

All the shows were phenomenal, largely because the performers were so engaging and dynamic. The focus on merging visuals with their music defined Alt-J's uniquely multisensory performance. The lead singer, Joe Newman's eerie, ethereal voice (which I happily discovered is not the effect of autotune) was paired with colorful, geometric graphics and visual overlays on the big screens flanking the stage. Of Monsters and Men entranced the audience with their delicate and perfectly harmonized voices, but they also enthused the crowd by performing "Little Talks" (there's something particularly satisfying about finally hearing your favorite radio staple live). Similarly, although Walk the Moon's entire performance was fantastically lively, supplemented with jokes, dancing, and upbeat songs like "Anna Sun" and "Different Colors," the applause following "Shut Up and Dance" was eas-

ily the loudest I heard the crowd get that weekend.

**MisterWives lead singer Mandy Lee jumped and danced wildly while singing on key.**

Although it is great listening to songs from the band's albums, listening to a performer's take on another song can just as fun. To hear a classic reinterpreted by another artist can both truly convey his/her unique style while reinvigorating the song. For instance, listening to Nate Ruess cover "Rocket Man" by Elton John was certainly a highlight of the weekend, because his voice perfectly fit the song and displayed his impressive vocal range. The standout performance of the festival though was one that I just happened to stumble on while waiting for Nate Ruess: MisterWives. The lead singer, Mandy Lee, was mind-blowingly energetic. She was somehow able to jump and dance wildly while still

singing on key, periodically address the crowd, and at a certain point, randomly whipped out some drumsticks and did a drum solo, all without seeming tired or out of breath. Misterwives' peppy songs "Our Own House" and "Best I Can Do," paired with their impeccable covers of "I Can't Feel My Face" by the Weekend and "Pretty Young Thing" by Michael Jackson made this an unforgettable performance.

In addition to the musical talent, the entire festival logistically was beautifully run and coordinated. I really got the sense that they put a lot of effort into making the audience's experience as great as possible. The stage lighting was beautifully and artistically done, individualized to each performer's style and sound. The process of getting into and out of the plaza was quick and stress free, meaning you did not have to spend all your time in a line trying to get in. The team behind Boston Calling also built a beautifully designed app specifically for the event. The app quickly tells people about the daily schedules, sends notifications when a performance begins, and allows the user to build a schedule customized to their preferences.

Boston Calling will be back in May with a whole new lineup.

## CAMPUS ARTS

# Maya Beiser reimagines classic rock with her cello

## The cello goddess rocks out to Zeppelin at Kresge

**By Aditthya Ramakrishnan**

Last Friday, I made my way to the front row of Kresge Auditorium to witness Maya Beiser's *Uncovered* concert. Jherik Bischoff stood on the left of the stage with his Hofner bass (similar to Paul McCartney's but with F-Holes ), the drummer, Matt Kilmer, was all set with his sticks, and Maya Beiser positioned herself in the center, with her electric cello.

Maya's prerecorded voice wafted in, substituting Robert Plant's unearthly scream on "Black Dog" with her spoken word rendition. The responding riff to her soft call was on acoustic cello. As a Zeppelin fan, It made me cringe. It seemed like a terrible idea to start off like that. Just as I was having second thoughts, the drums kicked in and the distortion went way up to eleven on the second variation of the riff. It was scary watching her play the solo towards the end — it was the same kind of fear you get listening to monsters like Hendrix or Page.

After the piece, Maya talked about how she was “shaken to the core” listening to Janis Joplin for the first time and how, as a classically trained cellist, this was utter sacrilege on her part. She then performed “Summertime” by Joplin (written

by the Gershwin brothers). The trio then huddled together to perform “Moanin’ at Midnight,” one of Howlin’ Wolf’s earliest tracks. Kilmer belted out percussive patterns on his cajon adding new textures to the old blues song.

**'Lithium' stood out, translating perfectly the emotionally draining process of listening to the original.**

Next up was “Three Part Wisdom,” a newly written multilayered piece by Glenn Kotche, which Maya describes as “Bach on meth.” After announcing that all audio would be generated live, she started playing while the other two musicians took a break. With sound engineer Dave Cook’s help, Maya was able to progressively overdub her cello and create the illusion of an entire orchestra. On “Epitaph,” Evan Ziporyn joined in to play the clarinet. Maya kept toggling her cello choice throughout the concert, using the electric for pieces like “Black Dog” and the Acoustic for

pieces like "Epitaph." By now, the bow had taken quite some shredding.

The next cover was of "Little Wing." The trio managed to capture the hauntingly beautiful tone of the original by keeping it painfully short rather than aimlessly rambling (\*cough\* SRV \*cough\*). Towards the end, Jherek went full John Cale by strumming and de-tuning his bass to descend fully into chaos, eclipsing Maya's weeping solo in the process.

"Lithium" started out with Maya plucking out the iconic arpeggio from Nirvana's 1992 piece. Before the concert, Evan said that he had arranged "Lithium" for Maya during their tour in the 90s as a tribute to Kurt Cobain, who had recently committed suicide. As the cover progressed, Matt went on an avant-garde cymbal play, and the cello's tone dripped with Kurt's rasp. They landed back on the initial motif and ended abruptly without resolving, a subtle nod to the unexpectedness of Kurt's death.

The final track “Back in Black” was jaw dropping. The applause was so intense that they performed “Kashmir” as an encore. Extraordinary melodic phrasing coupled with a thumping bass line intermittently hitting higher registers made for an engrossing experience. It ended as layers of riffs each with a different delay over-

lapped continuously and disappeared into thin air.

Out of these “uncovers,” “Lithium” stood out the most to me, as they were able to translate perfectly the emotionally draining process of listening to the original.

Though on the surface these covers seem close to their original counterparts, the skill with which the trio brought out the unexploited portions of well-known masterpieces is commendable. Evan Ziporyn obviously plays an instrumental role, having written all (except one) of the arrangements. Generating live loops and overdubbing live is no easy feat, and it makes sense that Dave Cook received equal billing along with the three musicians.

## Uncovered

## Maya Beiser

MIT Sounding Series

## Kresge Auditorium

## September 25



Want to get free movie tickets?  
Then write movie reviews for *The Tech*.  
(Advance screening opportunities also available!)

*join@tech.mit.edu*



# Raising the bar

How I got into exercising

By Elaine Lin

When I learned I got into MIT, I worried more about the swim test and PE requirements than about the academics.

Back in high school, I hated exercise because I sucked at it. I read all about how to exercise more, but never really did.

Internet articles give all sorts of perky advice, advertising “10-Minute Full Body Workout!” or “The Only 12 Exercises You Need!” With hundreds of suggestions, I could never figure out which movements to do. Exercises called “the inchworm” or “donkey kick” just sound like awkward dance moves, and let’s be honest: arm circles do not count as an upper body workout.

With no equipment, I tried to get out more to run. On some weekend mornings,

I would strap on my shoes, stretch, walk to warm up, and start running. Some runners get a “runner’s high,” but the endorphins never really kicked in for me because I was exhausted after five minutes.

This lack of endurance made getting to classes a struggle. My high school had two buildings — two stories each and more than a quarter mile apart — and only six minutes between classes. As soon as the bell rang, I would run down the stairs, speed walk across campus, clamber up yet more stairs, and finally arrive to class, barely in time and very out of breath.

Fortunately, at MIT, a bit of peer pressure and convenient exercise facilities motivated me to actually go exercise more.

My freshman fall, my friend took me lifting for the first time at the New House gym.

The only equipment I recognized was the dumbbell rack. I had no clue where to begin.

One dude was already there, squatting a bar plus six huge plates for a total of 315 pounds. I had never squatted any weight before, so my friend suggested that I start out with the bar. Only 45 pounds, so I figured it should be easy.

Actually, it took me a while to be able to squat the bar, and it took me even longer to be able to bench it. But, even my first time lifting, I could complete the same routine as stronger people with smaller weights. Unlike when running, I did not feel immediately fatigued. When the standard bar was too heavy, I used the smaller 20-pound bars or dumbbells.

Exercising regularly no longer felt like an impossible goal. When I first started, I

did not know whether my routine was optimal for getting swole fast, nor did I care. I regularly went lifting three times a week, and I increased the weights I used as I got stronger.

Since then, I’ve improved my old routines. Amateur lifters don’t really need separate arm and leg days, nor do they need tons of bicep curls. My routine now consists of squats, bench presses, and deadlifts — three exercises that target multiple muscle groups.

I have raised the bar when it comes to exercise. I used to consider 5-minute jogs and body weight squats to be a workout. Come on, Elaine, do you even lift? Now, I can say, “Yes, yes I do.”

*Elaine Lin is a member of the Class of 2018.*

## THE FIRST YEAR

# So how exactly do I make an app?

A comp sci-illiterate attends HackMIT

By Vivian Zhong

It might be exaggeration on my part to say that I’m wholly illiterate, but compared to the ever-expanding language of computers, my programming experience pretty much equates to knowing the alphabet. Two Saturdays ago, equipped with a somewhat functioning knowledge of command prompt and for loops, I entered the cavernous hub of ingenuity that is HackMIT.

For the entire week leading up to the hackathon, I would cringe every time I heard someone discussing coding, apps, or complicated math-y things I’d never heard of — anything related to comp sci. MIT being MIT, I was cringing left and right; such conversations inevitably reminded me of how little I knew, and how utterly unprepared I was.

Yet at the same time, I was terribly excited. I’d had an idea for an app filed away in my brain for a while, and from time to time I’d fantasize about realizing it. The thought of being able to finally turn my thoughts

into a working program had me quite giddy.

This dichotomy of feelings lasted all the way through HackMIT. I discovered that I indeed knew very little — certainly insufficient to realize my app idea. My two teammates, though both more proficient than I was, had not the wherewithal to make it either. And it didn’t help that a mentor walking around told us that our app was neither particularly original nor realistically feasible. We decided to ignore him and plough on ahead. From then on it was a long day and night of mixed confusion, frustration, camaraderie, and delight.

There is nothing quite like the euphoria you get from seeing an app that you helped create work for the first time after many dark hours of error messages. This moment came close to the end of the hacking period, and it itself made all the challenges that came before entirely worth it.

And HackMIT provided much more beyond that: I bonded with a team of people I’d never met before; I pitched our admittedly simple app to company reps as if it was

a real product, and basked in the warming glow of reciprocated enthusiasm. As for our early skeptic, we never did meet him again.

Our app would still be stuck in Python purgatory if it were not for the devoted help of other mentors, who spent hours at a time not only fixing our programming problems but explaining them thoroughly so that I could actually build my knowledge and experience.

Of even greater help was a friend who, by way of Skype, basically became the fourth member of our team. He gave us enough information to get us started, but not so much that we could not call the project our own. There is no need to shy away from aid at HackMIT; only make sure that you are receiving the right kind.

I saw many different approaches to HackMIT among the myriad participants. There were those who were definitely in it to win it, but there were also many who, like my team, were not. The most relaxed approach consisted of not really competing, but rather going around lending a

hand here and there, chatting with different teams, going to company talks, and, indisputably, collecting free swag and eating free food — and everyone who did it had an absolute blast.

I personally chose a middle road: I was focused on accomplishing my goal, but not so singularly as to disavow frivolity. In the middle of our coding session, I decided to borrow a Synaptics sensor — not because I planned on incorporating it into the project, but because who knew when else I’d get to play around with one?

In essence, I think that HackMIT is something of a microcosm of MIT as a whole. It’s intimidating, it’s sometimes hard to get through, but you’ll come through having met the greatest people and passing the most amazing time. So don’t be afraid to dive into programming culture at the deep end that is hacking. You’ll splutter and flounder, but you’ll surface knowing how to swim.

*Vivian Zhong is a member of the Class of 2019.*

# DID YOUR MIT ESSAYS GET YOU IN?

*The Tech* is collecting successful application essays (**hint: yours!**).

Email your pieces to *cl@the-tech.mit.edu!*



# RALLY FOR MIT CLIMATE ACTION

**STAND WITH  
SCIENCE!**

*WITH ICE CREAM &  
LIVE MUSIC BY  
MELODEEGO*



**OCT 2, 12-2PM**  
**KRESGE OVAL (WEAR BLUE!)**





# Davis-Millis reflects on family’s time at Random

## Housemaster search committee to convene next semester with 2 student representatives

Davis-Millis, from Page 1

Davis-Millis became housemaster of Random in 1995. Her son, a “smart, quirky” kid, was about to enter kindergarten at the time, and he didn’t fit in well in their neighborhood in Dorchester, where Davis-Millis and her husband lived. “What better place than an MIT dorm” to find a community, she recalled thinking. So she and her husband went through an interview process and were selected. She said that one of the students asked what she and her husband would do if they heard a scream at 2:30 a.m. “That depends on the scream,” her husband replied.

“I thought that was a great answer, and so, apparently, did Random Hall,” Davis-Millis said.

She said that Random Hall has changed her in many ways. Living

among engineers “has been really revelatory” for her. She has come to appreciate the engineering mindset, which she describes as “seeing the world not just as this mysterious state that happens” but instead like “a series of problems that can be broken down and solved.” She also described the joy she has come to find in diversity, not only that of different nationalities and backgrounds, but of different ways of thinking. She said it has been “thrilling” to help build a community that “really gets behind exploring and celebrating our differences.”

Next semester, there will be a search for a new housemaster. The search committee will be chaired by another housemaster, most likely one from an east campus dorm, and will include Senior Associate Dean for Student Life Henry J. Humphreys, Random Residential

Life Area Director Michael Barcelo, two students (usually president and vice president of the dorm), one Graduate Resident Tutor, and other MIT faculty members.

Candidates approved by the search committee will be brought to the dorm so residents will have the opportunity to interview them. In a dorm-wide meeting held Monday night, Davis-Millis encouraged residents to approach their favorite faculty members about the housemaster opportunity. While housemasters are typically tenured professors, Davis-Millis indicated that the Random housemaster position may be open to non-tenured faculty as well: Random’s small size and its limited accommodations might make it more difficult to convince people to apply for the job. In addition, non-tenured faculty may have more time to devote to students in the dorm.

Davis-Millis said she doesn’t think she will be able to resist giving advice to the future housemasters of Random, even if they don’t want it.

When asked about her favorite stories, she told one about the day her family’s collie had to be put down. Her son, then a junior in high school, was very upset, and wanted to clear his mind by running on the treadmill. The treadmill, however, required a key in order to operate, and the key had to be checked out from desk, which was closed at the time. Davis-Millis ran “frantically” around the building, and finally found a desk worker. The student happened to be an International Math Olympiad competitor, and Davis-Millis, who admitted she is slightly math-phobic, had always been in awe of him. She was crying, and said, “I’m so embarrassed to be so emotionally dependent on an animal.”

And the student said, “I wouldn’t be embarrassed. We all depend on each other all the time.”

She said she thought to herself: “You know, that’s it. That’s really it. I’m in a place with these mathematicians whose work I don’t understand, but damn, if there’s one thing we all know, it’s that we do all depend on each other all the time, dying collies, and treadmills, and all.”

Davis-Millis is beloved by Random residents. At least a third of the residents showed up for the meeting on Monday night. She assured a somber community that “it’s gonna be fine.” Near the end, she called for last questions, and Random Co-President Taylor S. Sutton ’17 raised his hand.

“You have a question, Taylor?”

He walked over and hugged Davis-Millis. “That’s what I was hoping it would be,” she said.

# Founding a makerspace in Iraq presents challenges

## Law, politics, and culture each cause difficulty for would-be makers in Middle East

Makers, from Page 1

the top 10 with his project called i-mimic, which is a motion-capture suit to be used by 3D animators.

It was at this competition that Arif connected with MIT for the first time. He later met MIT’s director of digital currency, Brian Forde, in Iraq. The two kept in touch, and with the help of a non-profit organization called PeaceTech Lab, Arif made his first trip to the United States this week.

Arif was accompanied by Mohammed Hassan Abdulaleem and Adbulreda Hussein Reshak, who also helped found Science Camp. Their trip was part of a larger initiative by PeaceTech Lab to encourage the use of technology in minimizing violence in conflict regions. Tim Receveur, director of the program called PeaceTech Exchanges, said they have worked in Iraq for about two years on “better governance, citizen engagement.” While they usually host events in the countries they work in, this was a unique case where they helped bring Arif and his co-founders to the United States. In addition to visiting MIT, the three attended the New York Maker Faire on Sunday.

Arif, Abdulaleem, and Reshak presented some of their projects

during a public event at MIT on Monday evening. They showcased a glove they built at Science Camp that can be used to display a dynamic 3D model of one’s hand on a computer. Animators could use the glove to capture motion and gamers might enjoy the more realistic quality it lends to games.

Arif started Science Camp after taking part in events at a Baghdad makerspace begun in 2012. The makerspace had a culture unlike the restrictive one he’d grown accustomed to in the pharmaceutical industry. It was emphasis on open source technology and “how people share knowledge” that inspired Arif to introduce a makerspace in Basra.

For Abdulaleem, the new maker space was a place to improve his skills and broaden his career horizons. Despite studying electrical engineering, he found there were few opportunities to be creative with engineering outside of college, a situation that resulted in many of his classmates joining large oil companies after graduating. Abdulaleem felt that the companies curbed innovation and forced people to follow a set template.

Today, all founders work part-time at Science Camp while supporting themselves through jobs in

bigger industries. They have tried to make it a space where they can escape the limitations of their day jobs. There is little separation between people working on different projects, and Arif emphasizes collaboration between different fields like architecture and mechanical engineering.

Believing that Iraqis consider him and his colleagues “pioneers,” Arif encourages children to use the makerspace and hopes to add activities specifically for them, such as a Lego workshop he saw in Berlin. Iraq has very few science museums and other resources that would encourage children to go into STEM, which Science Camp hopes to help change. According to Arif, it is “an investment that no one has yet made.”

When asked if religious tension in Iraq, such as between Sunnis and Shiites, causes a divide in the maker community, Arif said that he considers it an inclusive community and that through Science Camp he and his co-founders “want to redefine the polarity in Iraq to be makers and want-to-be-makers.” He noted that men and women of all ages are welcome to join.

The lack of support for STEM resources has caused logistical problems for Science Camp as well.

Chemicals and electronic parts are not easy to order because online shopping is a rarity. When Arif and his colleagues can find the materials, they have to wait a month or more because of shipping and restrictions — “not everything can enter the Middle East,” he said.

Little financial support is offered for events, so Science Camp attempted to “crowdfund.” However, because of how little people know about the Internet, the crowdfunding was done offline by having an information session where not only the concept of a maker space, but even the concept of crowdfunding, had to be explained to people who are used to very different forms of business. It’s this unfamiliarity and lack of interest in STEM that Science Camp aims to turn around.

The founders of Science Camp believe their makerspace and the entire culture behind the maker movement have the potential to promote peace in an area stricken by wars. For Nawres, it’s not about the technology, but rather the connections that form between makers.

Violence forms out of ignorance, he said, so the most important thing is to make “contact with the thing you think [of as the] enemy,” because to him, all those

who are makers are not enemies but rather “a big family.” The three co-founders had hoped visiting the U.S. would broaden their perspective through meeting other makers at the Maker Faire and at MIT.

While at MIT, Arif, Abdulaleem, and Reshak were inspired by the strength of the community and the ease with which collaboration takes place. Of the groups they visited, Abdulaleem and Reshak particularly enjoyed meeting the rocket team. Arif was impressed by the fusion between art and technology in various projects. “This type of thinking must be transferred overseas,” he said.

Going forward, the three technologists hope to further their connection to MIT. They are also considering turning their makerspace into a fabrication laboratory based off a program that was started in the Center for Bits and Atoms at the Media Lab.

Arif said he regarded MIT as a “grandfather in the fields of entrepreneurship and tinkering with technology and electronics.” While he expressed his happiness for being here, he said he was truly thrilled that Abdulaleem and Reshak were here with him. In the future, he hopes “that many people from Basra come here.”

# It’s Dangerous to Go Alone!



# Take This.

join@tech.mit.edu



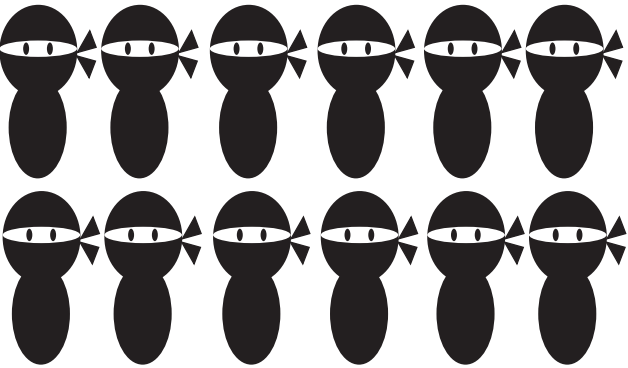
Have a great project idea to impact  
MIT undergrads?

Apply for a  
**Baker Foundation Grant**

Get the application at  
[bakerfoundation.mit.edu](http://bakerfoundation.mit.edu)




Baker  
Foundation



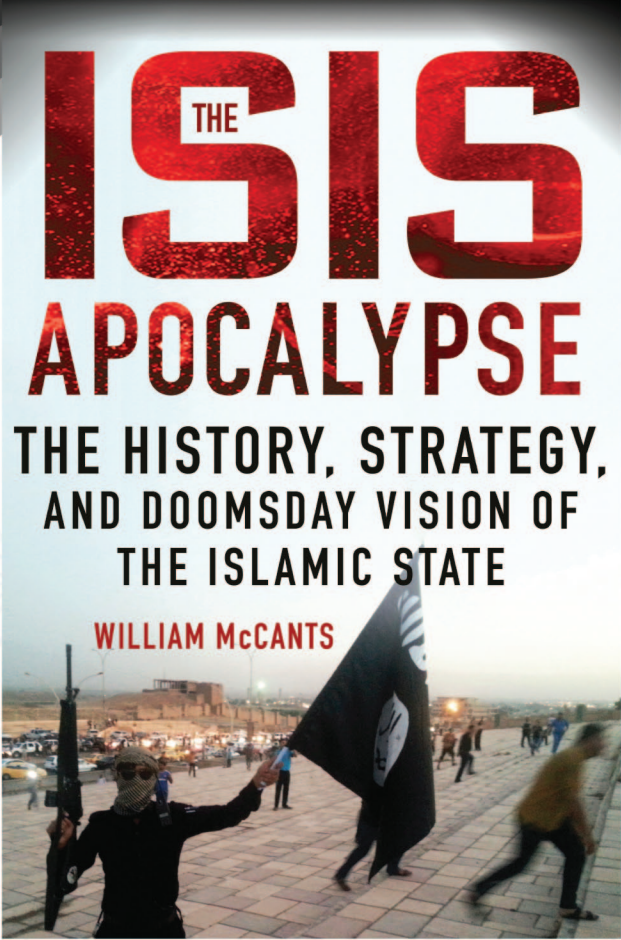
**WE'RE SEEKING TO  
BUILD OUR FORCES**

**JOIN@TECH.MIT.EDU**



MIT CENTER FOR INTERNATIONAL STUDIES  
[web.mit.edu/cis](http://web.mit.edu/cis) | [starrforum@mit.edu](mailto:starrforum@mit.edu)

STARR FORUM



**William McCants** is a fellow in the Center for Middle East Policy and director of the Project on U.S. Relations with the Islamic World. He is also an adjunct faculty member at Johns Hopkins University and has served in government and think tank positions related to Islam, the Middle East and terrorism, including as State Department senior adviser for countering violent extremism.

**Thurs, Oct 1, 2015**  
5:30 PM - 7:00 PM  
4-370 | 182 Memorial Drive, Cambridge



# September: men's soccer's Sean Bingham '16

**By Souparno Ghosh**  
SPORTS EDITOR

SPORTS EDITOR

*The Tech:* Hello Sean, thanks

*TT:* Since you have donned

**SB:** I started playing club soccer when I was 7. I played for the Commack Club from the Long Island Junior Soccer League. A

Among pros, I would say Messi. He is just so fun to watch — definitely the best soccer player that has ever played.

*This transcript was lightly edited for clarity and length.*



# Freshman makes final four at USTA regional tourney

*Cauneac '19 is the first from MIT  
to reach the final four since '06*

*DAPER STAFF*

With his outstanding effort throughout the three day tournament, Cauneac '19 became the first member of the MIT men's tennis team to make it to the semifinals as a singles player since Evan Tindell '06 did it in back-to-back seasons. Tindell won the ITA New England championship in the fall of 2003 and was the runner-up the following season.

MIT hosts its own Invitational Tournament this coming weekend.

## September, week 5

MIT women's soccer team suffered a 0-2 reversal at the hands of Springfield College this past Saturday. Center for-

— *Souparno Ghosh*